

## CLAIMS

1. Polymer powder produced by a process of milling or precipitating characterised in that it has a surface being compact and not jagged.
2. Polymer powder for producing a three-dimensional object by means of laser sintering, characterised in that the BET-surface is smaller than  $6 \text{ m}^2/\text{g}$  and at the same time the upper grain limit is below  $100\mu\text{m}$ , the  $D_{0.9}$ -value is below  $90 \mu\text{m}$ , and the  $D_{0.5}$ -value is below  $60 \mu\text{m}$  and the particles comprise a basically spherical shape.
3. Polymer powder according to claim 1 or 2 for producing a three-dimensional object by means of laser sintering, characterised in that the BET-surface is smaller than  $5 \text{ m}^2/\text{g}$  and at the same time the upper grain limit is below  $100\mu\text{m}$ , the  $D_{0.9}$ -value is below  $80 \mu\text{m}$ , and the  $D_{0.5}$ -value is below  $55 \mu\text{m}$  and the particles comprise a basically spherical shape
4. Powder according to one of claims 1 to 3, characterised in that the powder has a BET-surface having a value smaller than or equal to  $4 \text{ m}^2/\text{g}$ .
5. Powder according to one of claims 1 to 4, characterised in that the powder has a BET-surface having a value smaller than or equal to  $3 \text{ m}^2/\text{g}$ .
6. Powder according to one of claims 1 to 5, characterised in that the powder has a BET-surface having a value smaller than or equal to  $2 \text{ m}^2/\text{g}$ .
7. Powder for manufacturing a three-dimensional object by means of laser sintering according to one of claims 1 to 6,

characterised in that the refreshing factor in laser sintering is less than 50 percent.

8. Powder according to claim 7, characterised in that the refreshing factor is less than 30 percent.

9. Powder according to one of claims 1 to 8, characterised in that the powder is a polyamide powder.

10. Powder according to one of claims 1 to 9, characterised in that it consists of polyamide 11 or polyamide 12.

11. Powder according to claim 9, characterised in that the powder is a precipitated PA12 powder.

12. Method for producing a powder according to one of claims 1 to 11, wherein as a base material a plastic powder attained by means of precipitation or milling is used which is mechanically or mechanically-thermally mixed for at least one minute in an appropriate aggregate.

13. Method according to claim 12 wherein the base material has at least one further powder component.

14. Method according to claim 13 wherein a further powder component is a polymer powder or an additive.

15. Method for manufacturing a three-dimensional object by means of laser sintering wherein subsequent layers of the object to be formed are subsequently solidified from solidifiable powder material in positions corresponding to the object and a powder according to one of claims 1 to 11 is used as powder material.

16. Method according to claim 15 wherein the powder base material has at least one further powder component.

17. Method according to claim 16 wherein a further powder component is a polymer powder or an additive.